

# Notice of Allowability

Application No.

09/712,596

Examiner

Hal D Wachsman

Applicant(s)

HARNETT, SEAN

Art Unit

2857

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Supplemental declaration (1-5-04).
2. ☒ The allowed claim(s) is/are 1-9,11-16,18-24,26-31 and 33-37.
3. ☒ The drawings filed on 14 November 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets" ) must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948 ) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Hal D Wachsman  
Primary Examiner  
Art Unit: 2857

### **REASONS FOR ALLOWANCE**

1. The following is an examiner's statement of reasons for allowance:

Claims 1-4 are allowable over the prior art because the prior art because the prior art does not disclose or suggest: applying fuzzy logic rules to phase and magnitude error signals, in a radio frequency matching network, according to one or more fuzzy sets for which the phase and magnitude error signal enjoy membership and obtaining drive signal values based on the fuzzy logic rules for each of the phase and magnitude error signals.

Claims 5 and 6 are allowable over the prior art because the prior art does not disclose or suggest: a means for applying fuzzy logic rules to phase and magnitude error signals, in a radio frequency matching network, according to fuzzy sets for which the error signals enjoy membership and a means for obtaining drive signal values according to the fuzzy logic rules for each of the fuzzy sets for which the error signals enjoy membership.

Claims 7 and 8 are allowable over the prior art because the prior art does not disclose or suggest: applying a plurality of fuzzy logic rules to first and second error signals, in a radio frequency device, according to the fuzzy sets for which the first and second error signals enjoy membership and obtaining a plurality of drive signal values based on the plurality of fuzzy logic rules for each of the first and second error signals.

Claims 9 and 11-15 are allowable over the prior art because the prior art does not disclose or suggest: a controller receiving at least one respective phase error signal and magnitude error signal, in a matching network interposed between a radio frequency generator and a load, the controller applying fuzzy logic rules to the at least one of a impedance phase error signal and an impedance magnitude error signal according to the fuzzy sets for which the error signals enjoy membership in order to generate at least one control signal to vary the network impedance, thereby matching the source impedance and the load impedance.

Claims 16 and 18-23 are allowable over the prior art because the prior art because the prior art does not disclose or suggest: a controller receiving at least one sensed signal comprised of at least one of an impedance phase error signal and an impedance magnitude error signal, the controller applying fuzzy logic rules to the at least one sensed signal according to the fuzzy sets for which the impedance phase and impedance magnitude error signals enjoy membership in order to generate at least one control signal to vary the network impedance of a matching network interposed between a radio frequency generator and a load, thereby matching the source impedance and the load impedance.

Claims 24 and 26-30 are allowable over the prior art because the prior art does not disclose or suggest: applying fuzzy logic rules to impedance phase and impedance magnitude error signals according to the fuzzy sets for which the impedance error signals enjoy membership to generate fuzzy output signals

based upon the impedance phase and impedance magnitude error signals and generating a control signal to adjust the variable impedance of a radio frequency matching network.

Claims 31 and 33-37 are allowable over the prior art because the prior art does not disclose or suggest: applying fuzzy logic rules to a sensed signal, that varies in accordance with a parameter of a radio frequency impedance matching network, according to fuzzy sets for which the sensed signal enjoys membership; generating fuzzy output signals based upon the sensed signal and generating a control signal to adjust the variable impedance of the matching network based upon the fuzzy output signals.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal D Wachsman whose telephone number is 571-272-2225. The examiner can normally be reached on Monday to Friday 7:00 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2857

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Hal D Wachsman  
Primary Examiner  
Art Unit 2857

HW  
March 1, 2004